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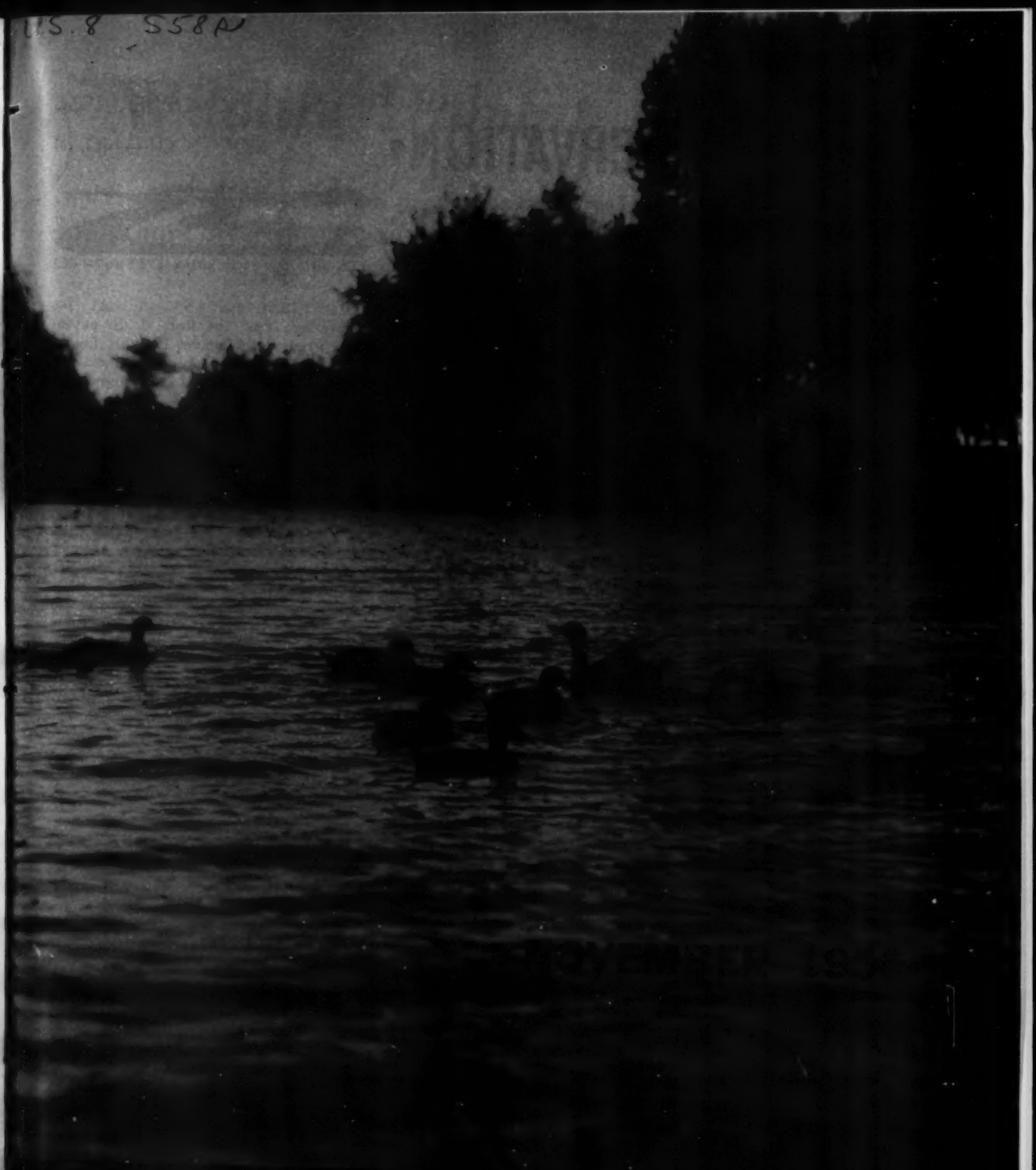

SOIL CONSERVATION

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★ THIS MONTH ★

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THE FIRST PATENT.—It was 166 years ago that the first U. S. patent was granted to Samuel Hopkins for "a new apparatus and process" in making potash from wood. It was signed by George Washington.

In 1790 in Vermont, where Hopkins developed his furnace process, the forests were being cut and burned to get them out of the way so the settlers could raise food for their families. Trees were looked upon as obstacles to a family's chances of making a living, and as cover for Indians and other potential enemies.

As standing timber, the trees had little value except those that could be used on the homesteads for cabins, barns, and fences. As potash, they had cash value, not only because soap-makers and wool-processors needed potash and would pay for it but also because it was relatively light in weight and the buyers usually would pay the cost of shipping. As a source of cash revenue, the trees converted to potash were a handy aid to many farm families and vital to the progress of the young nation.

Editors are invited to reprint material originating in this magazine.

FRONT COVER—Wild ducks on a Wisconsin pond. Sound soil and water conservation practices help wildlife.

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Wildlife Habitat Improved

Soil and water conservation programs on farms and ranches of the United States have greatly improved wildlife habitat in most instances, and thus have helped increase most species of beneficial wildlife.

By EDWARD H. GRAHAM

FARMERS and ranchers of the United States have done more for wildlife during the past 20 years than has ever been done before on private lands in any country.

Habitat improvement is the key to wildlife management. That is true on private as well as on public land. And, because most of the hunting in the United States is done on private land, landowners and operators become pivotal figures in wildlife management.

It is not enough, however, to say that farmers and ranchers are key figures. They become wildlife conservationists only when they do something about improving wildlife habitat. But in recent years farmers and ranchers in this country have shown a great deal of interest in wildlife. Many of them have modified their operations to improve their lands as wildlife habitat. Improvement of wildlife conditions, in fact, has come to be an integral part of soil and water conservation programs on thousands of farms and ranches, hand-fitted to the individual conditions on each farm or ranch.

In doing this, our land users have pointed to the objective that must be reached if we are to have the wildlife we want in America.

Note.—The author is director, plant technology division, Soil Conservation Service. This article is adapted from a paper presented by him before the International Union for Conservation at Edinburgh, Scotland, June 1956.

Canadian geese on a spring fed pond on the Banning-Lewis Ranch near Colorado Springs, Colo.

We must learn how to manage the land so that we can increase the production of wildlife, both on lands devoted exclusively to wildlife and on those lands we manage primarily for other purposes.

Even the areas originally set aside as wildlife refuges have themselves required management. For one reason or another nature proved inadequate. In some instances the species to be protected were unable to persist in the changed environment that developed after the refuge area was established. Hunting pressure or other pressures, such as the demands for livestock grazing, in some cases have been sufficient to require the reserve managers to permit such use, with resulting changes in wildlife environment.

Management measures have been necessary especially in refuges for migratory waterfowl, where the construction of water impoundments and the growing of food plants have been extensively undertaken. One of the real problems in the administration of a national migratory waterfowl refuge system in the United States, comprising some 3 million acres, is the development of land and water management practices that will maintain or increase the populations of waterfowl on the refuge areas.

In the United States as in other parts of the world, the use of land for agricultural development has modified much waterfowl habitat.

Mallard ducks rearing young in a small slough on a New York farm.

Muskrat in an Illinois farm pond.

All reasonable efforts should be made to preserve the remaining waterfowl nesting and wintering ranges in North America. But much of the habitat that existed before settlement will inevitably disappear before the constant pressure of human expansion. Multiple-lane turnpikes, airports, widespread urbanization, extensive industrialization, and other demands for land take more than 1 million acres every year in the United States. Some of this is wet land. The future would indeed be dark for waterfowl in North America if no alternative or substitute for natural habitat were possible. But an alternative does exist—a substitute with great potential that is already realized in part.

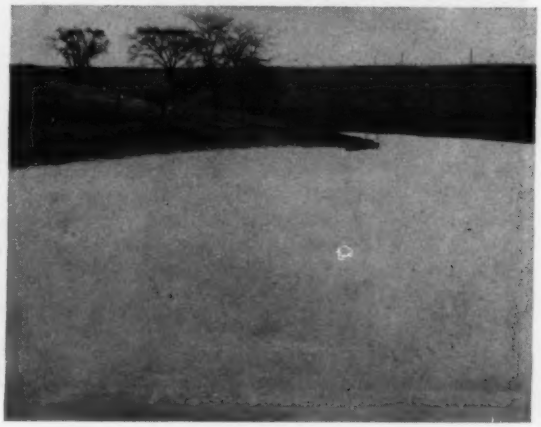
The alternative is the conscious creation of ponds and other manmade bodies of water in coordinated soil and water conservation programs and their intentional management for waterfowl. As an integral part of a long-range plan of good land use, an individual farmer or rancher adjusts his operations according to the determined capabilities of his land for production—whether for cultivated crops, livestock, wood, or wildlife. His crop fields, pastures, woodlands, and wildlife areas are delineated on a map and their management related in a long-term conservation plan. As a part of such a plan water areas may be built for stock water or other practical purposes and in some cases for fishponds. They are suitable for migratory waterfowl and other wildlife, create a pleasant

recreational area on the farm, and add to the esthetic value of the landscape.

As part of better land use programs, farmers and ranchers in the United States have constructed nearly 2 million ponds in the past 20 years. The ponds vary in surface area from a portion of an acre to several acres. In many parts of the country they have literally changed the face of the landscape. There are now water areas where none existed before. Whether these manmade areas can take the place of natural habitats for waterfowl is often debated. There is no doubt that we are learning a great deal about making them suitable for waterfowl. Furthermore, they have the advantage of being relatively permanent parts of the established landscape because the landowner wants them, and in many instances he wishes to manage them for waterfowl.

In the prairie region of the north-central United States, farmers have drained a number of small natural ponds that provided waterfowl habitat. Such drainage has taken place, for example, in the eastern part of South Dakota, where the use of the land is largely for farming. In the western part of the State, which is natural grassland now used mainly for grazing livestock, the creation of farm ponds has done much to compensate for the loss of natural ponds in the eastern part of the State. In western South Dakota, where nature had provided few natural water areas, there are now more than 40,000 manmade impoundments in 39,000 square miles. Investigators of this newly created enviornment have concluded that such impoundments are supporting a new breeding population of ducks—a population that in 1950 contained nearly one-fourth of the ducks in the State. The impoundments were constructed primarily to provide water for cattle as a part of improved range management. In this type of country such ponds often produce several duck broods per pond. The U. S. Fish and Wildlife Service states that in North Dakota such production compares favorably with natural ponds and that such small impoundments are rated of major importance to waterfowl. Similar reports come from other parts of the United States.

In addition to waterfowl, other species of birds as well as fur bearers and other mammals have been recorded from pond environs. Among the noteworthy results of biological progress in recent years has been the application of techniques for the production of high yields of fish from such farm and ranch ponds. The large majority of ponds constructed as part of soil conservation programs on farms and ranches have been stocked, fertilized, and managed for fish production with yields of from 100 to 250 pounds per acre. Unlike fish farming in Europe and the Far East, American ponds are managed for sustained yield, and do not require annual restocking. A practice new to America is now taking shape in Arkansas ricefields where rice is rotated with fish; these impoundments are also being modified to support migratory waterfowl.



A Missouri gully (above) that was converted into a farm pond (below).

Yet even more significant than the somewhat incidental wildlife value of farm ponds are the efforts farmers are making to create water areas specifically for wildlife habitat. In New York State, on certain upland sites, landowners are impounding shallow water to create small marshes. In 1954, an examination of 235 such marsh areas, averaging 5 acres in size, showed 85 percent to have ducks nesting on them—mallard, wood duck, black duck, and blue-winged teal. Along the coast of South Carolina, farmers who want to encourage waterfowl make shallow impoundments of brackish water 1 to 4 feet deep and a few acres in size. The impoundments make excellent conditions for widgeongrass, *Ruppia maritima*, a prime duck food. Methods of water level control and the planting of other suitable duck food plants make the impoundments capable of supporting 30 or 40 ducks per acre over the winter period, from November to March. These and other methods of creating waterfowl habitat are being developed by private landowners and operators with on-site assistance of SCS technicians as integral parts of the coordinated, long-range conservation plans for their land.

A few other examples will further indicate what is being done for wildlife as a part of soil and water conservation programs. In the Great Plains it has become popular to plant windbreak or shelterbelt strips of trees to protect farmsteads and crop fields from the open sweep of the winds. They provide a woody element to the environment that was previously lacking. Proper selection of species has increased the wildlife values of the windbreaks. Both deer and tree squirrels are consequently found far out on the plains, miles from where they could formerly have existed. Windbreaks also provide habitat for birds, including ring-necked pheasants, many of which have been saved from death during severe winters in the protective shelter of the trees.

In the Eastern States many farmers are now using closely spaced plantings of *Rosa multiflora* as a permanent living fence. Requiring less maintenance than a conventional fence, a rose hedge adds a note of beauty to the farm landscape. Rabbits, foxes, mockingbirds, cardinals, towhees, indigo buntings, and other species utilize the rose fences. During the past winter in southern New York such hedges sheltered large numbers of robins far out of their normal winter range during an unusually severe season. It is interesting to note that such plantings are an excellent means of en-

Four ponds were constructed on this Iowa farm as a part of the soil and water conservation program.

A shrub border near a farm woods in Maryland that furnishes food and shelter for many kinds of wildlife.

couraging the insectivorous praying mantis, the egg cases of which are a common sight in the hedge fences.

The effect of proper land use on an upland game species has been notably illustrated in an increase of bobwhite quail on farms under soil conservation plans. In Missouri, conservation farming was undertaken on a 2,000-acre tract of small, rundown farms. The conservation practices that were established included pasture management, liming and fertilizing of crop fields, contour cultivation, crop rotations, building of several farm ponds, and the planting of waste areas and fence rows. The area was also stocked with quail. By the establishment of conservation practices any farmer could afford to apply himself, this tract became one of productive agriculture. Furthermore, it produced, after only 4 years of conservation farming, a wintering population of 44 coveys of quail. All this on an area where normal hunting was permitted and where, before conservation farming, quail stocking had been unsuccessful.

In the southeastern United States, planting of *Lespedeza bicolor*, a perennial shrubby legume, has largely replaced annual grains on farmland as food for the bobwhite quail. The seeds of this Asiatic lespedeza have proved to be a favorite quail food and use of the plant has resulted in an increase of the bobwhite is many areas. Thus the habitat is improved for a particular wild species on normally used agricultural land.

The above examples of the creation of wildlife habitat and increase of wildlife through soil and water conservation programs on private lands could be multiplied many fold. They are not exceptions. They illustrate the most significant development in wildlife management in our time—the improvement of wildlife habitat by those who own and operate the land. This practical accomplishment has depended upon the coordinated approach to the total conservation job, in which the management of wildlife takes its right and proper place.

Habitat management through soil and water conservation promises wildlife its best chance of a permanent and ever better place in this rapidly changing world of ours. And attention to wildlife in our soil and water conservation programs can make the use of our land yield not only the basic requirements of living, but recreational and esthetic values as well.

DISTRICT SCHOLARSHIP.—Two boards of soil conservation district supervisors in Arizona have joined together in recognizing promising young men so that they could give substantial recognition to all-round high school students. They believe there's a great need for outstanding high school graduates to go to college and prepare themselves for the agricultural, scientific, and teaching fields.

The first year for the joint award was 1956. It was made to John Robinette, Stanfield, Ariz., at the Casa Grande High School. Supervisors Rex Anderson of the Stanfield-Maricopa Soil Conservation District and John A. Fearn of the Casa Grande Soil Conservation District made the presentation.

John Robinette was chosen for his all-round activities. He ranked high in scholastic ability, had been a member of F.F.A. for 4 years, and president in his senior year. He was also president of the Boys Federation. He was a member of the student council and an outstanding athlete, being chosen for the all-State football team in his senior year. He participated in track and played on the baseball team. He was also selected as a representative to Boys State, and Student Rotarian.

The scholarship, which amounts to $250, is to be given each year. The Stanfield-Maricopa District pays $150 prior to enrollment for the first semester, and the Casa Grande District pays $100 prior to the start of the second semester.

Robinette plans to enroll at the University of Arizona, Tucson, and major in agriculture.

—RAY W. BATES

A Small Watershed Demonstration

By LOUIS B. EARLE

THE first small watershed demonstration in south central Kansas was held near Rose Hill, Kans., on May 9, 1956 on the farm of Paul Foley, a tractor dealer in Wichita. Foley furnished more than $125,000 worth of dirt moving equipment for the demonstration and treated all the guests to a beef barbeque in the evening.

Soil Conservation Service technicians of Wichita and El Dorado assisted Foley in planning and directing the demonstration. They had previously helped develop a complete conservation plan for the farm with Foley and had laid out the practices for the demonstration.

The main purpose of the event was to show the land treatment practices many Kansas farmers may carry out on their land, and the benefits of these practices, as farmers participate and cooperate in small watershed programs.

Over 300 persons coming from a 21-county area around Wichita attended. Attending were farmers, city and county commissioners, county agents, members of the steering committees of seven small watersheds in Kansas, members of Agricultural Stabilization and Conservation Committees, SCS technicians, business and professional men, and many farm power contractors.

On Foley's farm a pond had been built prior to the demonstration. The construction of the dam and its similarity to flood detention dams was explained. Stakes, with ribbons of two different colors attached, showed the level of the pond when full and the level of water if the structure had been designed for flood detention purposes.

Benefits of a farm pond were reviewed. For example, the group was told that farm ponds offer a good source of stock water, provide excellent fishing if properly stocked and cared for, and may often provide a good source of irrigation water. Recreation, too, was mentioned.

Land clearing was observed during the day. A hedgerow containing stumps of many dead trees was removed. This old hedge had served its purpose, but was now preventing installation in an efficient manner of waterways and terraces.

Terrace construction was also demonstrated and it was pointed out that terraces serve two principal functions. They reduce erosion by slowing down runoff water, and they hold the water on the land where it falls for more complete absorption into the soil.

Realizing an income in the form of fence posts, fruit, or berries from trees planted in

A pond on the Paul Foley farm that also serves as a flood detention structure.

Note.—The author is work unit conservationist, Soil Conservation Service, Wichita, Kans.

Constructing a broad base terrace as a part of the small watershed demonstration near Rose Hill, Kans.

shelterbelts was discussed. Increased wildlife growth in tree planted areas also was brought out. The group watched a tree planting machine owned by the Sedgwick County Soil Conservation District. It was pointed out that the machine is available on loan to any farmer in the district.

Native pasture renovation and contour furrowing was shown. Contour farming, vegetated waterways, concrete outlet structures, earthen erosion control dams, and land clearing were also shown.

Methods of deeper seedbed preparation were demonstrated for the group. Subsoiling with both integrally mounted and pull-type subsoilers was shown. A heavy offset disk was then used on the soil to illustrate one method of mulch farming.

A seedbed up to 18 inches deep was prepared with a heavy disk plow. It was explained that this implement was being used to break up the hardpan in the soil for improved water infiltration and to mix the topsoil and the subsoil.

In the evening, after the beef barbeque, a discussion was held on how the different soil and water conservation practices demonstrated during the day tied into the small watershed program. L. L. Males, Cheyenne, Okla., banker, landowner, and secretary of the Washita Valley Council, was the principal speaker. His talk dealt with the small watershed program that has been completed on the Sandstone Creek near Elk City, Okla.

He stated, "Even the largest dams are useless in flood prevention if you don't treat the land above them."

Males showed the group a picture of a farm pond, in an untreated watershed, that only had several small pools of water in it. He pointed out that the pond lacked water, not because there'd been no rain in the watershed above the pond, but because it had silted in.

He said if the land in the watershed had been treated, the pond would still be serving to hold back runoff water, helping to prevent floods. "This same thing will happen to large dams if the land in the watersheds above them is not treated," Males emphasized.

Among the treatments that he said should have been used, were cover cropping, terracing, deeper tillage, and subsoiling. "None of these practices are new to us," he stated. "The SCS has been trying to get us to do them on our land for over 20 years."

"Farmers who don't install land treatment practices on their land are wearing out their machinery, their families, themselves, and their communities by farming in a way that permits erosion to run rampant. Such farming leads to floods. When farmers in a trade area lose

crops from floods, they cut down their spending and everyone suffers as a result." He added that at the present time, only one nickel of our present Federal dollar spent for flood prevention goes for small watershed work.

He concluded by saying that 20 or so years ago, they didn't know how to prevent floods. "But today, we know we can do something about flooding. Are we going to let such floods as we've all experienced go on year after year?" he asked his listeners.

Did the land treatment demonstration and Males' talk have an effect on those in attendance? This comment, made to Males by one of the guests, sums up the day's proceedings pretty well—"I felt that a small watershed program was what we need in our part of the country; now I'm doubly sure it's what we need."

That there was interest in small watershed programs in the Wichita and surrounding area was evidenced by the fact that members of the Wichita press, radio and TV stations, and state and regional agricultural and construction magazines were in attendance to report the day's happenings.

Cooperation in Cimarron County

By ARCHIE P. WELCH

COOPERATION among agricultural agencies in Cimarron County, at the west end of the Oklahoma Panhandle, has been real since the soil conservation district was organized there in 1949.

Up to that time the several agricultural agencies were plugging along at their own respective jobs. Several years of good crops and favorable prices had just passed, and the agricultural agencies each had their separate offices and separate programs. The district was organized by a few farsighted farmers and ranchers who could remember the Dust Bowl of the thirties, and wanted to do something to prevent another. The board of supervisors realized that the work of the different agencies needed to be coordinated and directed toward the same goal: more conservation on the land and better service to farmers.

A directive from the Secretary of Agriculture to combine all United States Department of Agriculture agencies under one roof where possible was the "shot in the arm" needed to start the agencies working closer together.

The Soil Conservation Service and the Production and Marketing Administration moved into the same office building, along with the soil conservation district office. They found, through this close association, that they had many problems in common as well as a common objective.

The county agricultural agent and Farmers Home Administration were in the county courthouse, just across the hall from each other, and only two blocks from the PMA and SCS offices.

When the SCS took over the responsibilities of the field work on permanent-type practices from the Agricultural Stabilization and Conservation Committees (formerly the PMA committees) it seemed like the natural thing to do in Cimarron County.

The ASC county committee and office manager began holding their monthly meetings on the same days as the district supervisors, and the two organizations usually ended up with a joint meeting. The vocational agriculture teacher, county agent, and county supervisor for the FHA were always invited to attend these regular meetings.

At the time for development of the county ACP Handbook, all agencies, and their respective advisory committees, are invited to sit in, and all are usually represented.

The district supervisors develop an annual plan of conservation activities. This includes: meetings that the county agent will conduct with the help of others; tours, arranged for by SCS technicians and assisted by boys of

Note.—The author is work unit conservationist, Soil Conservation Service, Boise City, Okla.

Earl Nance of SCS leads a land capability tour for the SCD board of supervisors, the ASC and FHA committees, and FFA boys in Cimarron County.

the Future-Farmers-of-America; informational meetings on the ACP program with discussions led by Warren Hodges, ASC office manager. Each agency has a part of the total job, and the overall program is guided and helped along by the district.

An excellent example of this cooperation came about when the FHA decided to use land capability information as a guide in determining an economical family-size unit and required all its participants in the Great Plains emergency loans to have soil and water conservation plans on their farms.

A tour was arranged by the district supervisors for local heads of the USDA agencies and their committees to study land capability information that would be used. A short meeting was followed by a 2-hour trip in the field, conducted by Earl Nance, area soil scientist of the SCS. The different soil types were discussed and the capability classes shown. Recommended treatments were explained by the local conservationist.

Immediately following this meeting, arrangements were worked out between the SCS and FHA whereby the FHA's farmer-advisory committee would screen all applicants before submitting requests to the SCS for land capability information.

Since that time, the SCS has received about 100 requests for land capability maps and has been rendering 10-day service. Jim Belford, county supervisor for FHA, or his assistant Don Davis, go with the SCS farm planner, and help the farmer and his wife develop the conservation plan and farm-and-home plan out on the farm.

County Agent Eugene Williams has a regular Saturday morning radio program. He often has heads of the different agencies and the vocational agriculture teacher as guests on his program. They discuss problems affecting the farmers and ranchers of Cimarron County.

The FFA class has a plan of conservation activities for the year, and it is tied in with the soil conservation district's annual plan of operations. This year, for example, the FFA boys acquired a display window on Main Street to show timely conservation problems and their solutions. This exhibit is changed weekly. The FFA class assists with a countywide grass and range tour, as well as taking part in the plant identification contest at the county fair. A plaque is awarded by the soil conservation district to the high scoring individual in the FFA and 4-H Clubs.

County Agent Williams and John Coltharp, vocational agriculture instructor, work together

(Continued on page 92)

City Scouts Earn Merit Badges

By A. B. FOSTER

HUNDREDS of thousands of Boy Scouts throughout the country are working for merit badges—badges that show achievement in more than 125 different skills. One of the most coveted, yet one of the hardest to achieve, is in soil and water conservation. It is particularly difficult for city boys to work out the requirements for this badge.

Scouts in Kansas City, Mo., have found a way to get their soil and water conservation merit badge. Through the cooperation of the Johnson County Soil Conservation District, the Soil Conservation Service, the Missouri Conservation Commission, and the farmers in the Blackwater Pilot Watershed in Johnson County, 880 Boy Scouts from greater Kansas City have already worked off the requirements for their soil and water conservation merit badges. Under the present arrangement many more will do so.

It was not a one-way proposition by any means. W. T. Bailey, who owns a 200-acre farm near Elm in Johnson County, said that it would have taken him a week to plant the 300 rods—about 10,000 plants—of multiflora rose on his place if he had done it alone. The Scouts did the whole job in 2½ hours on a Saturday morning in March 1956. They also planted 250 pine and cedar seedlings for a windbreak.

Bailey's farm was only 1 of 6 farms on which 520 Scouts from 7 troops in Kansas City planted 55,000 multiflora rose and 620 pine and cedar on their March outing—an outing that grew from careful planning and cooperation by several individuals and organizations.

Note.—The author is information specialist, Soil Conservation Service, Milwaukee, Wis.

Otis Thornburn of the Missouri Conservation Commission demonstrates planting techniques to a group of Kansas City Scouts.

Several years ago Paul Hallam, cashier for the Kansas City Power and Light Company, entertained Scout Troop Number 50 on his 375-acre farm in Johnson County, 33 miles from Kansas City. Hallam is counselor for the Kansas City Scout Council, an area including about 10,000 Scouts. To the city boys this outing was a thrilling experience and it was followed by other trips to the farm. So it was natural that when the Hallam farm became part of the Blackwater Pilot Watershed program in 1953, Hallam saw another opportunity to help the Scouts who were at that time launching their national conservation good turn. A new merit badge on soil conservation also had just been adopted.

Kermit Irwin of the Soil Conservation Service in the Johnson County Soil Conservation District, helped Hallam prepare the conservation plan for his farm. The flood prevention phase of his plan included an earth dam that would impound a 10-acre permanent lake with capacity for 60 additional acre-feet of temporary storage for flood control purposes. This body of water looked like a good possibility for wildlife development. The Missouri Conservation Commission was already formally cooperating with the Johnson County district and had planting stock available for multiflora rose and other stock. Hallam was anxious to cooperate on the wildlife phase just as he was on the rest of the conservation program.

So it was agreed to enclose the lake, and two grass waterways leading into it, with a living multiflora rose fence. The fence would protect the area from farm animals and would also provide food and cover for many kinds of wildlife. This would take 6,500 feet of fence—15,000 rose plants. There would also be needed 500 Scotch and loblolly pine for a windbreak.

It was at this time that Hallam suggested that the Scouts who had been coming out to his farm might like a chance to do some planting in connection with working off their merit badge requirements. He arranged with Charles Hart, a leader of the troop he had been inviting out to his farm, for 2 troops—a total of 160 boys—to come out and do the planting. They arrived at the Hallam farm at 9:30 on a Saturday morning in November 1954, accompanied by 30 of their fathers who came along to prepare the noon meal. Furrows for planting the rose and trees had been opened at 7 o'clock that morning.

A Scout patrol planting multiflora rose.

After holding a regular opening Scout ceremony in a nearby pasture, the boys got planting instructions from Otis Thornburn, field service agent for the Missouri Conservation Commission.

The area was divided into 400-foot stations. A scout patrol—6 to 12 boys—headed by a Powder Horn Scout and accompanied by an adult, was given each station to plant. Actual planting started at 10:15 and by 12 noon the job was finished. In addition to the job on Hallam's farm, 600 feet of windbreak and a quarter of a mile of rose was planted on the Merle Shafer farm nearby. Shafer came over and got 15 boys for his job. At noon the dads had the dinner ready and the boys were ready too.

Floyd Roberts, in charge of the sporting goods department for Kansas City's Sears-Roebuck Store, contacted the area council and interested them in taking on this kind of activity for all the Scouts in the city. After seeing the success of the event on the Hallam farm, Roberts was so enthusiastic that he asked Irwin of SCS if he could use 10,000 Scouts from the Kansas City area for a similar event in the spring.

Irwin was astounded. What could he do with 10,000 Scouts, all in one group? It would take 200 buses just to haul them! But it did indicate the number of Scouts who wanted to work in conservation and the problem of finding a way for them to get their merit badges. The soil and water conservation badge is one requirement for becoming an Eagle Scout.

It was agreed that 200 Scouts could be handled for a planting day in the spring of 1955 on the Blackwater watershed. Ten farms would be ready. The biggest job was on Tom Shier's farm where he had a 5-acre lake that needed 6,700 feet of rose fence in addition to some windbreak planting.

Actually 3 troops from Kansas City participated in the planting in April 1955, in addition to 4 troops from Warrensburg and 1 from Holden.

The 200 Scouts set out 45,000 plants on the 10 farms in about 2 hours. The same system of organization was used as in the fall planting. It was agreed that the boys should not work more than 1½ to 2 hours.

No planting was done in the fall of 1955 because of the extremely dry weather. But in March 1956, 520 Scouts, representing 7 troops from Kansas City, planted rose and pine on 6 more farms.

Chow time for Scouts who have been planting trees and shrubs, with the dads serving the meal.

This adds up to 880 Scouts who have worked off the requirements for their conservation merit badges in the 3 outings. This has not only been a real break to the boys and their leaders but it has been a great help to the farmers and to the watershed project as a whole.

Troops 50 and 123, which did the first planting in the fall of 1954, received a Presidential citation in January 1955 in recognition of the job they did.

As a testimonial to the quality of their work, Irwin's staff reports that the survival of the rose plantings is at least 95 percent and the pine almost as good. "This is excellent survival even for professionals," Irwin commented, "and we have had unusually dry weather."

A MISPLACED FARM PLAN.—I have just transferred from 10 years in the Sullivan County (N. H.) Soil Conservation District. As I was packing to leave, the Chester Silvers' told me they'd misplaced their farm plan. My last official act was to assemble another copy of their farm plan for them, and I did so gladly, because the Silvers never treated their conservation farm plan lightly.

To them their conservation plan was exactly what the soil conservation district intended—a design for efficient farming, a future for every acre of their Newport hillside, and a future for the Silver family, too.

Every time they added a practice Chet or Mrs. Silver, or both, would ask, "Where do we go from here? How will this work out when we get those other practices going?"

And how they used that plan! Used it to build a water storage pond for their registered Guernsey and Angus herds. Used it again to enlarge the pond and irrigate their berries. Even used it to get cooperation from the town. I remember that time the highway department took one look and said, "Sure, we'll meet you halfway." And they did—rebuilt a road ditch to outlet the Silvers' 600-foot pasture waterway.

Yes, and they used their farm plan to locate more raspberry land when business boomed; and to tile-drain the land to boost yields; and right now I hear they're using it to find an added pond site for more sprinkling water.

I could go on. But the point I wish to make is this: A conservationist puts a bit of himself into every farm plan he works on. To him, it really lives; it grows with use; and, as it grows, it gives greater service.

So, I was delighted to replace the Silvers' lost farm plan as I left the Claremont work unit office, and I was happy to receive their invitation to look them up any time I got back that way.

—LESLIE BLAISDELL

A Long View On Pines

By J. H. CHEEK

PLANTING pine seeds to grow seedlings for farmers to reforest their land, with the intention of buying them back in 10 to 20 years to process and resell as creosoted posts and poles, is taking a long look at pine.

The possibilities of this venture are too "futuramic" for the shortsighted but not for C. W. Gearner, rancher and owner of the Texas Creosoting Pole and Post Company of Mineola, Tex. He says, "It is a necessary cycle essential to the future operation of my business."

Mineola is located on the western edge of the pine belt of east Texas in the Wood Soil Conservation District. Approximately 200,000 acres of land within a 30-mile radius of Mineola was formerly covered with pine trees, three-fourths of which have been destroyed by improper cutting methods, fire, and clearing for other purposes.

About 50,000 acres, ranging from poor to good, are now scattered over the eastern part of the district. There is another 50,000 acres in old fields and worthless hardwood that is better adapted to growing pine than any other crop. This is the land that Gearner is trying to help reforest. He plans to continue in the nursery business until the demand can be satisfied from public or other private sources.

Gearner is gambling $5,000—cost of the operation—that the 3 million pine seeds he planted in a 2-acre nursery March 29, 1956 will grow more than a million seedlings for soil conservation district cooperators to transplant onto more than a thousand acres of deep sandy land next winter. Also, he is gambling that in about 10 years he can begin buying back these trees for his plant to treat and resell as creosoted poles and posts.

The need for additional plantings of pine in this area was seen by Gearner as he traveled through the country searching for timber to buy for his creosoting business. He realized unless something was done about it there would be no timber for posts and poles in a few years. Knowing that many farmers had been unable to buy seedlings to plant during the last 2 years he decided to put in a pine nursery to help supply the demand.

Before starting the project, Gearner visited the nurseries of the Texas Forest Service at Alto and the Red River Arsenal near Texarkana to find out all he could about growing pine seedlings.

Local Soil Conservation Service technicians assisted by selecting the site, analyzing the soil, designing the irrigation system, and furnishing other technical information needed to get the project under way. They expect to continue giving technical aid until the trees are harvested. Gearner has been a cooperator with the Wood Soil Conservation District for the past 8 years.

In selecting the nursery site the kind of soil, topography, nearness to existing water supply, and type of vegetation on the land were taken into consideration. Both chemical and physical soils analyses were made. The physical analysis was used primarily to determine the relationship of soil, moisture, and plant.

C. W. Gearner looks over his pine nursery—note the sprinkler irrigation system operating in the background.

Note.—The author is work unit conservationist, Soil Conservation Service, Mineola, Tex.

The chemical tests were run to find out if the soil contained any harmful elements and the kind of fertilizers needed.

The site selected was moundy and had to be leveled with a bulldozer and grader. The vegetation was pushed off to eliminate as much as possible trouble from grass and weeds. The ground was flat-broken and double disked. Then 50 beds, 400 feet long and 34 inches wide, were thrown up leaving a balk, or middle, 18 inches wide for irrigation pipe and walking space.

Before the land was bedded, 1,500 pounds of 5-10-5 fertilizer per acre was disked into the soil. Another 500 pounds per acre was put on top of the beds and worked in the soil to a depth of 1 inch.

Planting was done with a fertilizer distributor that seeded 2 of the 34-inch rows at once. The holes in the distributor directly over the middles were plugged to prevent planting seeds off the rows. The rate of seeding desired was 50 seeds per square foot—enough to grow about 30 seedlings for harvesting. The trial and error method was used and proved to be almost perfect as only 1 pound of seed was left after the 2 acres were planted.

J. H. Cheek (left) and C. W. Gearner inspect a seedling grown on the Gearner nursery.

Fifty pounds of slash and 125 pounds of loblolly costing $850 were planted. The slash averaged 18,500 seeds to the pound and the loblolly 22,500. The loblolly seeds are smaller and harder than the slash and require longer to germinate unless they are put through a softening process called stratification. A recent count indicated that about 50 percent of the seeds planted were up and growing.

Pine straw was used on the beds for protection of the seeds. It was put on by a manure spreader and evened by hand. Too much straw was put on in some places and part of it had to be removed since the extra thickness prevented the seedlings from emerging.

The irrigation system was designed by SCS engineers. The water is lifted from a deep well into a reservoir then pumped directly into the lines. The system is the sprinkler type, consisting of 500 feet of 3-inch pipe carrying 2-foot risers with spray heads every 40 feet. Penetration tests were made to determine the time required to obtain proper saturation of the soil.

Keeping the weeds out of the seedlings is one of Gearner's big jobs. He uses both hand labor and chemicals to keep the nursery clean. Spraying with chemicals is much cheaper than weeding by hand; but some handwork is necessary to eliminate certain kinds of weeds not easily killed by chemicals.

Damping-off is the most serious disease he has to contend with. It is caused by fungi that kill seedlings from the start of germination until 6 or 7 weeks after emergence. No signs of damping-off were observed but the spray was used as a preventive measure.

Cutworms, ants, red spiders, and grubs are some of the insects Gearner has to guard against. Pocket gophers are always a threat to most any growing plant and have given some trouble.

Birds have not done much damage, as a guard was kept on duty from daylight to dark every day until the plants were too large to be damaged.

December is usually the beginning of harvest time in east Texas. Inventories will be made at intervals to determine as near as possible the number of seedlings that will be available for delivery. More laborers will be used at this season than any other as the job of

lifting, culling, and packing will be a major operation. Gearner would like to have seedlings with 10-inch tops and 7- to 8-inch roots at digging time.

Selling the trees has been the easiest and least expensive job Gearner has encountered. All he had to do was to have some order blanks printed. Soil conservation districts within a 50-mile radius of his nursery requested more than 2 million trees before all the seeds had come up. He plans to sell all his trees through soil conservation districts.

If Gearner's project is a success—and it looks as though it will be—other private nurseries probably will be started in 1957. Visitors have indicated their intentions to grow pine for their districts next year.

Nine Fields Become One

By removing old stonewall and brush hedges, and adopting contour farming and other conservation practices, a New Jersey farmer increases efficiency and yields.

By DONALD K. WOLFF

JOHN ROMANI used to have 9 small fields bordered by more than a mile of hedgerows. The 9 fields totalled 64½ acres. Now he has 1 field of 74 acres. The stonewall hedgerows with their intermingled brush are gone. He picked up 9½ acres by removing them.

By making 1 field out of the 9, Romani has cut plowing and planting time in half. "I used to make 340 turns in the small fields," he explained. "Now I make only 40. Besides, there's less chance for 'misses' now. I don't have to stop and start my corn planter so often."

Mr. and Mrs. Romani checking their farm conservation plan.

Romani became a cooperator with the district last spring and agreed to apply to his farm all the conservation measures needed to protect his soil against erosion and to keep its fertility at top level.

His conservation work has attracted much public attention because his farm is a sort of showcase. It's on the much-traveled Belvidere-Phillipsburg Road in New Jersey. Romani likes the attention his conservation work is getting. "Maybe it'll inspire others," he said.

Removing the hedgerows is just a small part of Romani's conservation program. Soon as he got this done, he put in contour strips.

While it's a little early to show consistent higher crop yields from his conservation work, Romani believes the contour strips have helped already. Despite the dry weather of 1955, he harvested 80 bushels of oats and 100 bushels of corn per acre where he had his strips. Prior to putting in contour strips, he got only 70 bushels of oats and 80 bushels of corn per acre in years of good weather. The hay strips yielded 4 tons to the acre compared to 3 tons formerly harvested.

Note.—The author is work unit conservationist, Soil Conservation Service, Belvidere. N. J.

"In the field that was contour stripped, I got full advantage of my seed, lime, fertilizer, and what little rain that fell," Romani said. "None of it washed down the hill to be lost forever."

Romani farms 200 acres. He has been interested in conservation for a long time. One thing after another, however, kept him from getting started on a conservation program until last spring. Then, when he became a cooperator with the Warren County Soil Conservation District, he and I went over every acre of his farm. We worked out his conservation plan as we went. Then he started to put the plan into effect.

After the hedgerows were out of the way, the new 74-acre field was laid out in contour strips. Oats and corn were planted in alternate strips on 34 acres. Then, in the spring of 1956 he put 20 acres more in contour strips. The rest will go in next year.

Under his conservation plan, Romani will plant a cover crop in all corn at the last cultivation. That's to protect the soil and maintain fertility and good soil structure. He will give 50 acres of pasture intensive care, including the reseeding to grasses and clovers and liming and fertilizing as needed. The livestock will be rotated and all grazing will be stopped at certain times to give the forage plants a chance to recover, reseed, and develop.

Romani has realined his pastures by removing another 1,000 feet of stone hedgerows. In this adjustment he planted over 6,000 feet of multiflora rose living fences. Another 1,200 feet of these living fences will be planted in 1957.

Romani's remaining conservation job includes clearing brush from 4 acres of Class II land that has been idle for years. He'll then work that area into his stripcropping program. He intends to improve the drainage on 16 acres of pastures by putting in open ditches. An irrigation pond is to be built jointly with his neighbor.

His conservation crop rotation consists of corn for 2 years, oats for 1 year, and hay for 3 years or longer. He has about 60 dairy cows, 10 yearlings and calves, and 200 laying hens.

"I'm a little late in getting started," Romani said, "but I hope to make up for lost time. I've always thought that conservation was the thing for me. Now I know."

FARM WINDBREAKS.—Roy Melendy has 5 windbreaks covering about 14 acres of his wheatland. He says, "I'm not concerned with the dollars and cents angle but with the comfort of having tree windbreaks and the pheasants that live in the trees. There are also blackbirds, redbirds, doves, and sparrows making their homes in my tree groves."

Roy came to northeastern Colorado from central Nebraska in 1940 and bought 640 acres of rolling wheatland north of Otis, Colo. Since then conservation farming practices such as terracing, contour farming, and stubble mulching have paid dividends in dollar profits and the saving of topsoil and soil fertility. The tree planting operations have helped greatly.

The first few years after coming to Colorado, Melendy missed the trees that he had been used to in Nebraska. In 1949, the Soil Conservation Service and the Colorado State Game and Fish Department made available to farmers trees for farmstead and field windbreak plantings. Roy was one of the first to take advantage of this program.

Roy prefers 10-row windbreaks because the trees furnish protection and cover for wildlife. From pheasant cover standpoint, 8 rows north and south do the job of 10 rows east and west. The trees are mainly squawbush, American plum, chokecherry, Russian olive, Chinese elm, Rocky Mountain red cedar, and Ponderosa pine. His cattle can feed with comfort behind the windbreaks during the winter. Snow is caught and held in the trees leaving the corrals and buildings free from snow.

Roy Melendy and one of his young field windbreaks.

Approximately one-fourth of Washington County's 1,200 farms have farmstead and field windbreaks covering more than 1,000 acres. Estimates indicate that more than half the county's farms will have farmstead windbreaks in another 10 years now that farmers like Roy Melendy have shown the way.

—DICK CONRAD

There's no better Christmas gift than a subscription to this magazine.

Quality Cattle and Range

By WINFIELD S. CATON

HIGH quality cattle and abundant nutritious grasses are paramount dreams of most ranchers and range conservationists. J. D. Ackerman, owner and operator of the Turkey Track Ranch, 35 miles southeast of Colorado Springs, Colo., is making this dream come true.

Ackerman, who is president of the board of supervisors of the Central Colorado Soil Conservation District, operates the Turkey Track on a cow-calf-steer basis. His feeder steers have topped the market several times and just this year were awarded the reserve championship at the International Livestock Exposition in Chicago.

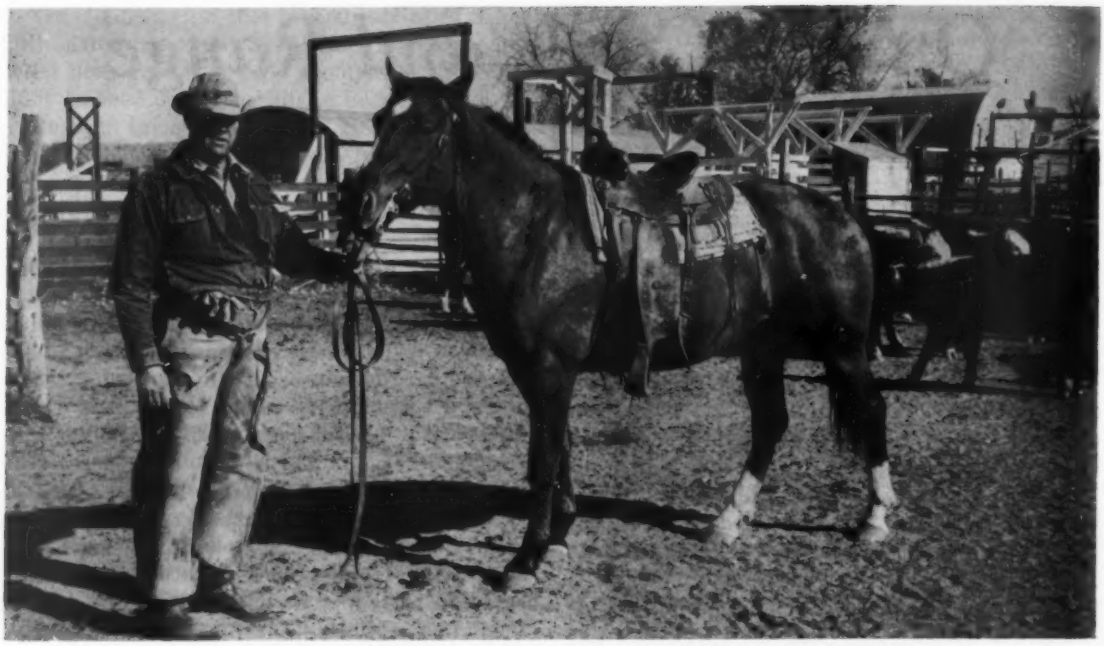
In spite of severe drought and high velocity spring winds in recent years, the condition and production of his ranges have improved each year. Climax species of grasses are increasing, vigor is on the uptrend, and litter is building up with each season. All this is the result of careful planning in the management and use of each pasture.

Note.—The author is work unit conservationist. Soil Conservation Service, Colorado Springs, Colo.

Success of the operations on the Turkey Track began with a herd improvement program. Though the larger portion of the breeding herd consists of grade Herefords, Ackerman has a small herd of purebreds. By careful selection of replacement heifers and use of good range bulls, the quality of his cattle is improving with each generation. His aim is to produce more pounds of beef from a smaller number of cattle.

The grass management program on the Turkey Track presents a complex problem. Range sites vary from sandhills with fine shifting sands to clay uplands with heavy soils derived from Pierre shales. Average annual rainfall is 12 to 13 inches. Topography varies from rolling plains to hills with slopes of 15 or 20 percent. Each pasture has its own particular problems. Using his range sites as a basis for management, Ackerman, cooperating with the Central Colorado Soil Conservation District and technicians of the Soil Conservation Service, is carrying out a complete range conservation and management plan. Briefly, his plan is to benefit and encourage growth and production of good

Driving heifers from the summer range to the winter range on the Ackerman ranch. Note the substantial amount of forage left on the range.



J. D. Ackerman and his favorite horse in a corral on the Turkey Track Ranch.

species of grasses at the expense of inferior grasses and annual weeds. Stock water plans provide a system of dams, wells, and springs so located that in no instance are watering places more than 1½ miles apart.

Grass management followed by Mr. Ackerman in the overall use of his ranges has resulted in an upward trend. Climax species of grasses, such as sand bluestem, little bluestem, needlegrasses, blue grama, side-oats grama, switchgrass, western wheatgrass, and alkali sacaton are on the increase. The composition of the range is reaching the maximum in important species desired for excellent condition. The vigor of these key species has been improving with each growing season. Litter is adequate and wind and water erosion have been practically halted.

Structural conservation practices such as diversions, water spreaders, development of stock water and erosion control dams, spring development, and contour chiseling and pitting have aided in the recovery of the ranges, but have played only a minor role in the overall improvement. The real solution has been the development, and more important, the carrying out of a sound grass management program.

The going has been slow and tough. The past 7 years of drought were discouraging, and the high velocity spring winds seemed determined to destroy all the advances that had been made after years of carefully executed plans. But the determination of the grasses matched that of Ackerman and now it can be seen that victory will be theirs.

Ackerman is claiming no glory for having done a good job. To him, the reward has been in marketing cattle of the highest quality and having a range of vigorous, nutritious grasses.

CIMMARON COUNTY

(Continued from page 83)

in preparing a catalog for the county fair, and arranging for livestock shows and sales.

When differences of opinion occur, the agencies involved immediately get together and work out the problem. Lack of understanding is the usual cause of hard feelings. Working closely together, with a sincere desire to understand the other fellow's viewpoint, has certainly contributed to closer cooperation.

DISTRICT PROFILE

ALLEN SMITH of SOUTH DAKOTA

ALLEN SMITH, Kadoka, S. Dak., rancher, county commissioner, supervisor of Jackson-Washabaugh Soil Conservation District, school board member, Greater South Dakota Association award winner, and a man of numerous other activities, is very modest. He doesn't like to talk about himself.

Smith is a conservation rancher who has proved to his own satisfaction that conservation pays good dividends. At any time of the year the grass looks good on his ranch because it is used properly. He believes in the policy "take half and leave half." His stock always look good because of lush grazing during the grazing season and plenty of good hay during the winter. He usually has about 21 acres available grazing for each cow.

The results of proper range management are evident. For many years now his cows have produced more than a 98 percent calf crop. This year they all calved within a 40-day period. As a result, the calves are uniform in age as well as in quality. In previous years he has nearly always topped the market with his calves.

Smith has always purchased top sires, which he keeps confined until breeding time. At breeding time cows are placed in excellent pastures with 1 bull for each 25 cows. By careful culling very few cows are barren, and if they are they are disposed of immediately.

Winter feeding is not a serious problem as Smith always has a good supply of hay. Several years ago he began a program to increase hay production. He accomplished this by water spreading. From several large drainages he diverted the water to his more level lands. When it reaches these lands, it is slowed down with ditches and dikes so that very little of the water leaves his land. This additional water on the hay land has increased production considerably. The extensive use of alfalfa with native grass has also contributed to the increase in production.

Community activities have a high priority on Smith's agenda. He is presently a county commissioner. Among his many duties he has given considerable study to the new tax laws and how they affect his constituents. He is vitally interested in school problems and in improving roads in the county.

As a supervisor of the Jackson-Washabaugh Soil Conservation District, Smith has actively encouraged the varied programs of the district, especially those that inform school children about conservation. For many years the district has sponsored conservation awards for school children in Jackson and Washabaugh Counties. This year students from every school in the two counties participated in the district program.

Smith has been a vigorous supporter of the local hospital. He and his wife have participated in fund drives for this cause and have helped considerably with programs sponsored by the hospital auxiliary. As a result of the efforts of the Smiths and others, the local hospital is in good financial condition.

It is difficult to find any community activity that the Smiths have not been assisting. It is almost impossible to find a person in the community who does not know them. Chances are that if you meet Smith on the street he will be in his working clothes. He will probably be busy too, but not too busy to visit a little, and before long the conversation will center on his chief interest—conservation.

—HUGH N. HILLER

Allen Smith

Districts Help Revive Nursery

By HAROLD L. HARRIS

THIRTEEN soil conservation districts, acting through the leadership of South Bingham (Idaho) Soil Conservation District, have had a big part in putting the Soil Conservation Service grass nursery at Aberdeen, Idaho, back into full-time and full-scale operation.

These soil conservation districts—11 in Idaho and 1 each in Utah and Nevada—provided the money, bought the land, and leased it to the nursery for the continuing production of seed for district increase blocks and seed of promising new strains to use in field-scale plantings.

Note.—The author is manager of the Soil Conservation Service nursery at Aberdeen, Idaho.

Started in 1939 to supply technical data and guidance to the grassland program of the Western States, the Aberdeen Soil Conservation Service Nursery operated continuously through 1953 when it was discontinued by decision of Congress. Standby funds were provided to maintain nursery material, pending a decision on operation of the nursery by the State. The 1955 session of the Idaho State Legislature declined to take over this responsibility because, it held, the operation is of national scope since it directly serves Idaho, Utah, and Nevada and indirectly serves other Western States. With this determination in Idaho, the Congress

Supervisors of the South Bingham Soil Conservation District, Idaho (left to right, standing) Bill Webb, Blaine Sasser, Brice Beck, LeRoy Bowman, and James Prestidge; (seated) Leonard Cornforth and LaMar Whyte.

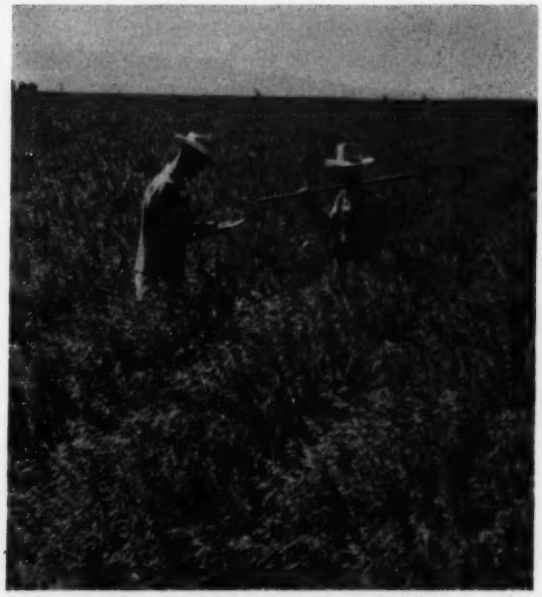
A group of soil conservation district supervisors from Utah inspects grass evaluation plantings at the Aberdeen nursery.

supplied funds to activate the nursery.

A new cooperative agreement, entered into with the Idaho agricultural experiment stations, helped give the enterprise new life by coordinating activities and eliminating possible duplication of effort. Through the agreement, lands were provided on the Aberdeen Experiment Station and the Tetonia Experiment Station to continue evaluating new strains of grasses and legumes.

In addition, lands were needed for the production of foundation seeds for district seed increase blocks and for the production of seeds of promising strains for field-scale plantings in the seven Western States. In the past this seed production program had been operated on rented lands subject to sale or rental increase, either of which could defeat the program. South Bingham Soil Conservation District supervisors decided that a permanent home for the nursery would be a definite asset to the community and the nursery, and at the same time safeguard a continuing contribution to the conservation and grassland movements of the Western States. After looking over several farms, the board selected the Ernest Landvatter place, 2 miles north of Aberdeen, as a suitable spot from the standpoint of soil, location, and cost.

Trial plantings of new accessions on the Aberdeen nursery.



A soil conservation district seed increase field in the South Bingham district of Idaho.

Then it was necessary to raise money to make the purchase. South Bingham Soil Conservation District, just a year old and without a source of income, explored the possibilities. After many evenings of discussion its supervisors decided to ask the help of other district governing bodies in Idaho, Utah, and Nevada. Through legal advice, contracts were developed giving each lender a first mortgage on a percentage-of-loan-basis on the farm and a promissory note to pay 4 percent interest with repayment annually.

The legal end cleared, they contacted other districts. Response was enthusiastic and rapid. Within a month the money was in hand and the contracts completed. Loans varied from

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$100 to $3,750. Soil conservation districts that dug into their bank accounts to make the loans include White Pine of Nevada; Weber of Utah; and Oneida, Gooding, Power, Dry Creek, Boundary, North Side, Latah, Bear Lake, Benewah, and Nez Perce of Idaho.

With the signing of the last paper the board leased the farm to the Soil Conservation Service for nursery operations. After the farm indebtedness is cleared, the South Bingham Soil Conservation District will use the lease money to further the conservation program in that district and for community betterment.

Those who helped secure money to buy the farm include district supervisors LaMar Whyte, chairman; Blaine Sasser, vice chairman; Leonard Cornforth, secretary-treasurer; John Heer and Bruce Beck; and alternate supervisors William Webb, LeRoy Bowman, James Prestidge, Walter Dirks, and Lenard Schritter.

After the lease was signed the nursery staff began to put the land into production. With the help of local SCS conservationists a contour map of the farm was made, the irrigation system was revised, and fields were staked for land leveling. Bob Hensen, local leveling contractor, helped put the fields in shape for irrigation. The Idaho Concrete Products Company, Pocatello, contributed three 18-inch concrete culverts, one 12-inch concrete culvert, and fourteen 12-inch concrete headgates for ditch controls.

When leveling operations were finished employees of SCS at the nursery began converting the existing field of wheat, alfala, and pasture to grass. Seeding operations started July 3, 1955. When this work is completed, the farm will include 9 acres of Topar wheatgrass, 4 acres of Sodar wheatgrass, 4 acres of stiporyzopsis (a cross between native needlegrass and native Indian ricegrass); 8 acres of Siberian wheatgrass, 4½ acres of a new bluebunch wheatgrass and several small plots of new or specialized strains.

LaMar Whyte, chairman, South Bingham Soil Conservation District, says, "We board members often wondered if we were doing the right thing. Now that it is over, we know that we did because everyone interested in the grassland program will benefit—the community, the district, the State, and the Nation. We sincerely thank all those who helped, especially the other districts that loaned us the money to make the purchase possible."

GAINS INTEREST.—Wendell H. Steedly, work unit conservationist at Georgetown, S. C., has a list of "satisfied customers" in his notebook, classified according to conservation practices being carried out on their respective farms. He uses the list in talking with prospective district cooperators and says it is very helpful in getting their interest.

CONSERVATION AWARDS.—Five nationally known conservationists were selected to serve on the awards committee for the 1956 Nash Conservation Awards Program. They are: Ted Pettit, national conservation director of the Boy Scouts of America; Dr. E. Laurence Palmer, conservation director of the National Wildlife Federation; Arthur H. Carhart, author of "Water or Your Life" and other books on conservation; Lou Klewer, outdoor columnist for the *Toledo Blade*, Ohio, and president of the Outdoor Writers Association of America; and Michael Hudoba, Washington correspondent of *Sports Afield* magazine.

Ten awards, each consisting of $500 and a bronze plaque, will go to professional conservationists, and 10 awards of bronze plaques will go to nonprofessionals.

The Nash conservation program was started in 1953.

THE INCAS AND LAND CAPABILITY.—The Incas provided for settlement of their new conquests by ordering a census to be taken of the population, and a careful survey to be made of the country, ascertaining its products, and the *character of its soil*. From Conquest of Peru, Vol. I., by William H. Prescott.